

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Twelfth Annual Report and Analysis of	)	WT Docket No. 07-71
Competitive Market Conditions with Respect	)	
to Commercial Mobile Services	)	
	)	

**COMMENTS OF THE MOBILE SATELLITE SERVICE PROVIDERS**

ICO Global Communications (Holdings) Limited, Inmarsat, Inc., TerreStar Networks, Inc., Mobile Satellite Ventures Subsidiary LLC, and Globalstar, Inc. (collectively the “MSS Providers”) submit the following comments in the above-captioned proceeding in which the Wireless Telecommunications Bureau (“Bureau”) seeks data and information in order to evaluate the state of competition among Commercial Mobile Radio Services (“CMRS”) providers in connection with its preparation of the *Twelfth Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services* (“*Twelfth Annual Report*”).<sup>1</sup> As discussed herein, Mobile Satellite Service (“MSS”) systems supplemented with an Ancillary Terrestrial Component (“ATC”) have the potential to serve the wireless broadband market. Their effectiveness in that market will be determined by the systems’ appeal and availability and by the value-added benefits stemming from the availability of a ubiquitous and robust satellite component.

**Background**

*ICO.* ICO is a next-generation satellite communications company that is developing an advanced hybrid system, combining both satellite and terrestrial communications capabilities, in

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<sup>1/</sup> See *WTB Seeks Comment on CMRS Market Competition*, DA 07-1652, WT Docket No. 07-71 (April 6, 2007) (“*Public Notice*”).

order to offer wireless voice, data, video, and Internet services on mobile and portable devices.

On July 17, 2001, the Commission granted ICO's request for a reservation of 2 GHz MSS spectrum for a non-geostationary satellite orbit system.<sup>2/</sup> The International Bureau later authorized ICO to serve the U.S. market through a single geostationary satellite orbit ("GSO") satellite, the ICO G1, at 92.85° W.L.<sup>3/</sup>

*Inmarsat.* Inmarsat provides a wide range of MSS offerings in the United States and around the world through a network of third party distributors and service providers. While Inmarsat initially was established to provide maritime services, its offerings have evolved over time to meet aeronautical communications needs, and, more recently, to serve land-mobile users. Over the last several years, Inmarsat has invested well over \$1.5 billion in the deployment of its fourth-generation, Inmarsat 4 ("I-4") satellite network, which is today providing innovative MSS services to the United States and globally on the most advanced mobile commercial communications satellites now in orbit.

Inmarsat's I-4 fleet supports a new class of innovative IP-based communications, including the Broadband Global Area Network ("BGAN") service. Using highly portable and easily deployed "notebook sized" antennas that are one-third the size, weight, and price of traditional Inmarsat terminals, BGAN provides voice and broadband service at speeds of almost half a megabit per second. Inmarsat recently has teamed with ACeS International Limited ("ACeS"), a leading hand-held voice services provider in Asia, to offer voice services to a dual-mode, pocket-sized handset which weighs about seven ounces. This device is being optimized to operate over the I-4 network, will support both MSS and GSM service, and is expected to be

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<sup>2/</sup> See *ICO Services Limited*, 16 FCC Rcd 13762, ¶ 1 (IB/OET 2001).

<sup>3/</sup> *New ICO Satellite Services, G.P.*, 22 FCC Rcd 2229, ¶ 21 (IB 2007).

available in the United States in late 2008. The 1-4 spacecraft in orbit and operating today are fully capable of supporting ATC, whether using a variation of these existing terminals or a new design. Inmarsat continues to refine its plans to deploy an ATC solution, and will seek Commission authority for ATC once those plans have been finalized.

*TerreStar.* TerreStar is the proposed assignee<sup>4/</sup> of a letter of intent (“LOI”) authorization, originally granted in 2001, to provide MSS in the United States using spectrum in the 2 GHz MSS band (2180-2200 MHz (space-to-Earth) and 2000-2020 MHz (Earth-to-space)) via TerreStar-1, a geostationary orbit satellite.<sup>5/</sup> The LOI authorization permits the use of 10 MHz of this 2 GHz MSS spectrum in each direction.<sup>6/</sup> TerreStar Networks (Canada) Inc., which is owned by TerreStar and TMI Communications and Company, Limited Partnership, holds an approval in principle issued by Industry Canada to operate TerreStar-1 in Canada.<sup>7/</sup>

TerreStar plans to operate a resilient, interoperable two-way communications system that can be used to address civil defense and disaster preparedness communications needs in North America. This will be achieved through next-generation communication networks that will provide universal access and tailored applications throughout North America on a universal chipset that can be incorporated in a wide range of wireless devices. TerreStar expects to be the

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<sup>4/</sup> See File Nos. SAT-ASG-20021211-00238 and SAT-AMD-20061127-00143.

<sup>5/</sup> See *TMI Communications and Company, Limited Partnership, Order*, 16 FCC Rcd 13808 (Int’l Bur. 2001); *TMI Communications and Company, Limited Partnership, and TerreStar Networks, Inc. Application for Review and Request for Stay, Memorandum Opinion and Order*, 19 FCC Rcd 12603 (2004).

<sup>6/</sup> See *Use of Returned Spectrum in the 2 GHz Mobile Satellite Service Frequency Bands*, Order, FCC 05-204 (December 9, 2005).

<sup>7/</sup> See letter from Michael D. Connolly, Industry Canada, to Steven Nichols, TerreStar Networks (Canada) Inc., File No. 46215-1 (113554 CL) (April 27, 2007).

first to offer customer-designed products and applications over a fully optimized 4G Internet protocol network.

*MSV.* MSV was authorized by the Commission in 1989 to construct, launch, and operate a United States MSS system in the L band.” MSV’s licensed satellite (called “AMSC-1”) was launched in 1995, and MSV began offering service in 1996. Today, MSV offers a full range of mobile satellite services, including voice and data, using both its own U.S.-licensed satellite and the Canadian-licensed L band satellite licensed to Mobile Satellite Ventures (Canada) Inc. (“MSV Canada”). In May 2005, the Bureau licensed MSV to launch and operate a replacement L band MSS satellite at 101°W<sup>9/</sup> In April 2005, Industry Canada authorized MSV Canada to launch and operate a next-generation L band MSS satellite at 107.3°W.<sup>10/</sup> On January 11, 2006, MSV announced that it had entered into a contract with Boeing Satellite Systems, Inc. for the construction and delivery of these next generation, transparency class L band satellites to serve the Western Hemisphere.” The satellites will be among the largest and most powerful commercial satellites ever built. Each satellite’s primary antenna will be twice as large as any previous commercial satellite, and the satellites will have significantly more power available over the U.S. compared to any other currently operational MSS system serving the

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<sup>8/</sup> *Order and Authorization*, 4 FCC Rcd 6041 (1989); *remanded by Aeronautical Radio, Inc. v. FCC*, 928 F.2d 428 (D.C. Cir. 1991); *Final Decision on Remand*, 7 FCC Rcd 266 (1992); *aff’d*, *Aeronautical Radio, Inc. v. FCC*, 983 F.2d 275 (D.C. Cir. 1993); *see also* *AMSC Subsidiary Corporation, Memorandum Opinion and Order*, 8 FCC Rcd 4040 (1993).

<sup>9/</sup> – *See Mobile Satellite Ventures Subsidiary LLC, Order and Authorization*, DA 05-1492 (May 23, 2005) (“*MSV-I Order*”).

<sup>10/</sup> *See* Letter from Jan Skora, Director General, Radiocommunications and Broadcasting Regulatory Branch, Industry Canada, to Mr. Larry Boisvert, President, Mobile Satellite Ventures (Canada) Inc., File No. 6215-3-3 (April 5, 2005).

<sup>11/</sup> *See* “Mobile Satellite Ventures Engages Boeing to Develop Next Generation Satellites” (Jan. 11, 2006), *available at* [http://www.msvlp.com/pr/news\\_releases\\_view.cfm?id=80](http://www.msvlp.com/pr/news_releases_view.cfm?id=80).

U.S. The satellites will be used to provide advanced mobile broadband services to devices that are virtually identical to cell phone handsets in terms of aesthetics, cost, and functionality. MSV is ahead of the Commission's milestone schedule and is planning to launch these satellites beginning in 2009.

*Globalstar.* Globalstar was authorized by the Commission in 1995 to construct, launch, and operate the Globalstar "Big LEO" MSS system,<sup>12/</sup> which provides service in the United States and abroad via non-geostationary-orbit satellites, using the 1610-1621.35 MHz band for transmissions from mobile earth stations to satellites and the 2483.5-2500 MHz band for transmissions from satellites to mobile earth stations. An indirect, wholly-owned subsidiary company, GUSA Licensee LLC, holds an FCC blanket license for operation of Globalstar mobile earth-station terminals and is responsible for provision of Globalstar MSS services to end users in the United States.<sup>13/</sup> Globalstar is now in its seventh year of providing MSS voice and data services. Globalstar's services are currently available in all areas of the world, except central and southern Africa, Southeast Asia, and the Indian subcontinent, areas in which Globalstar is in the process of negotiating to expand coverage.

To ensure the robustness and future of its satellite services, later this year Globalstar plans to launch eight spare satellites. In addition, on December 4, 2006, Globalstar announced that it has executed a contract with Alcatel Alenia Space, now Thales Alenia Space ("Thales

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<sup>12/</sup> See *Application of Loral/Qualcomm Partnership, L.P. for Authority to Construct, Launch, and Operate Globalstar, a Low Earth Orbit Satellite System to Provide Mobile Satellite Services in the 1610-1626.5 MHz/2483.5-2500 MHz Bands*, DA 95-128, 10 FCC Rcd 2333 (1995). The term "Big LEO MSS" denotes MSS systems that use assigned frequencies in the 1610-1626.5 MHz band for transmission from mobile earth stations to satellites.

<sup>13/</sup> See *AirTouch Satellite Services US, Inc., Application for Blanket Authorization to Construct and Operate up to 500,000 Mobile Satellite Earth Terminals Through the GLOBALSTAR Mobile Satellite System, Order and Authorization*, DA 99-2010, 14 FCC Rcd 17328 (1999).

Alenia”) under which Thales Alenia will design, manufacture and deliver the Globalstar second-generation constellation of 48 LEO satellites.” These satellites will be backward compatible with Globalstar’s existing satellite constellation and with its global gateways, will have a lifespan through at least 2025, and will ensure that Globalstar is positioned to provide reliable, efficient, and effective voice and data services for the long term.

*ATC Services.* In 2003, the Commission adopted rules authorizing MSS licensees to integrate ATC into their satellite systems.<sup>15/</sup> In establishing these rules, the Commission recognized the enormous potential of ATC, finding that the expanded authority would promote the efficient use of MSS spectrum, allow MSS providers to offer ubiquitous service by overcoming coverage gaps in densely populated areas, and achieve economies of scale that would dramatically reduce the cost of MSS equipment and service, promote public safety and national security, and increase wireless competition generally.<sup>16/</sup> To date, two companies — MSV and Globalstar — have obtained approval from the Commission to offer ATC services.<sup>17/</sup>

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<sup>14/</sup> See “Globalstar, Inc. Signs Contract with Alcatel Alenia Space for Second-Generation LEO Satellite Constellation” (Dec. 4, 2006) *available at* [http://www.globalstar.com/en/news/pressreleases/press\\_display.php?pressId=426](http://www.globalstar.com/en/news/pressreleases/press_display.php?pressId=426). By using first-generation designs and incorporating technological advances that have occurred in the past ten years, Globalstar can produce state-of-the-art satellites without incurring large research and development expenses.

<sup>15/</sup> See Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands, *Report and Order*, 18 FCC Rcd 1962 (2003) (“*ATC Order*”).

<sup>16/</sup> *ATC Order* at ¶¶ 1, 21, 23, 24, 29, and 32.

<sup>17/</sup> MSV was granted ATC authority in November 2004 to operate ATC in connection with the existing and planned L band MSS systems of MSV and MSV Canada. See Mobile Satellite Ventures Subsidiary LLC, *Order and Authorization*, 19 FCC Rcd 16130 (Chief, International Bureau, November 8, 2004). In November 2005, MSV filed to modify this license to take advantage of new rules adopted by the Commission in February 2005. See MSV, Application, File Nos. SAT-MOD-20051104-00212, SAT-MOD-20051104-00211, SES-MOD-20051110-01561 (November 4, 2005). Globalstar was granted ATC authority in January 2006. See

Both currently authorized and prospective MSS/ATC operators are actively planning for the deployment of their ATC systems, and anticipate that MSS/ATC will prove to be a valuable enhancement to their MSS systems by improving their ability to provide service in urban and other areas where MSS signals are blocked, expanding the variety of services they are able to provide, and enabling them to make more efficient and intensive use of their assigned spectrum for the benefit of their public safety and commercial customers.

*Public Notice.* On April 6, 2007, the Bureau issued a Public Notice soliciting data and information to assist in the preparation of the *Twelfth Annual Report*.<sup>18/</sup> Among other issues, the Bureau seeks input regarding the state of competition in the provision of CMRS services and how competition among CMRS providers varies across the United States, in particular between rural and urban areas.<sup>19/</sup> In addition, the Bureau solicits comment on the current provision of CMRS by MSS carriers, including the extent to which MSS services function as a substitute for terrestrial CMRS services.<sup>20/</sup>

### **Discussion**

Once deployed, MSS/ATC systems will dramatically enhance MSS carriers' service offerings and expand their customer base. Most importantly, the addition of ATC in urban and other areas where MSS signals are usually blocked or too weak to penetrate indoors will vastly

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Globalstar, Inc., *Order and Authorization*, 21 FCC Rcd 398 (2006) (Chief, International Bureau, January 20, 2006). In July 2006, Globalstar filed a Petition for Rulemaking to increase the amount of its assigned spectrum in which it may provide ATC services which remains pending. See Globalstar Petition for Expedited Rulemaking to provide Ancillary Terrestrial Component Services in its Entire Spectrum Allocation (filed June 20, 2006).

<sup>18/</sup> See *Public Notice*.

<sup>19/</sup> *Id.* at 4.

<sup>20/</sup> *Id.*

increase the utility of MSS by eliminating the problems of blocked signals and less than adequate call quality in such areas. As a result, emergency personnel and other users will be able to maintain uninterrupted communication no matter where they are. In the case of an emergency where terrestrial networks are unreachable, such as Hurricane Katrina, MSS/ATC terminals will instantly and seamlessly switch to the satellite network, ensuring that emergency responders have continued and immediate access to reliable, interoperable, and redundant communications even when terrestrial networks fail. Instead of waiting for satellite phones to arrive or for their local networks to be rebuilt, they will be able to continue using the same phones they carry every day. Similarly, commercial customers will be able to rely on MSS/ATC services to communicate when terrestrial networks are no longer functioning because of man-made or natural disasters.<sup>21/</sup>

MSS/ATC networks also will provide vital new services in rural and remote areas. For example, some MSS/ATC providers may choose to deploy transportable base stations to rural and remote areas (such as Native American tribal communities or national forests) that can be set up quickly for relatively low cost to provide vital telecommunications capabilities. Public safety personnel and commercial customers alike will be able to rely on these transportable MSS/ATC base stations to meet their immediate communications needs in the event of emergencies such as forest fires, earthquakes, pandemics, or terrorist attacks, as well as for their daily communications needs. Most importantly, MSS/ATC networks will be capable of providing affordable broadband communications services such as Internet access for rural and underserved

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<sup>21/</sup> See, e.g., Dick Kelsey, *Satellite Phone Interest Renewed After Attack Rescue Use*, Newsbytes News Network, Sept. 25, 2001 (noting the “enormous interest” in Globalstar’s services from companies re-evaluating their communications capabilities in case of emergency following the September 11<sup>th</sup> terrorist attacks).



customers, fulfilling the Commission's goal of ensuring affordable broadband service for all Americans.

By deploying MSS/ATC services, MSS operators will be able to achieve gains in spectrum efficiency, allowing them to make more intensive use out of their assigned spectrum. ATC will permit higher density use of MSS spectrum within a specific geographic area — enabling effectively thousands of simultaneous voice-equivalent users per channel through reuse of frequencies across relatively short distances between base stations, versus far fewer simultaneous voice-equivalent users per channel in satellite mode. And by integrating ATC with their existing and future MSS systems, MSS/ATC operators will be able to reuse their assigned frequencies more intensively and thus support a much larger number of public safety and commercial customers on a day-to-day basis and during emergencies.

Accordingly, once deployed, MSS/ATC systems will be poised to bring to the marketplace the high-quality, affordable mobile services for their current and future public safety and commercial customers – no matter where they are located – that the Commission envisioned when it decided to permit MSS providers to incorporate ATC into their MSS systems.<sup>22/</sup> Furthermore, because MSS/ATC providers will offer user equipment that resembles traditional mobile consumer devices, they will be able to take better advantage of economies of scale for equipment, making it possible for them to offer high quality voice, broadband, and other services to their subscribers at prices that more closely approximate those of cellular and PCS operators.

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<sup>22/</sup> See Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands; Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands, *Report and Order and Notice of Proposed Rulemaking*, 18 FCC Rcd 1962 (2003).

Moreover, some MSS/ATC operators will be able to offer smaller, less-expensive handsets, comparable to those offered by terrestrial CMRS providers.

### **Conclusion**

The MSS Providers request that the Commission consider these Comments in connection with its preparation of the *Twelfth Annual Report*.

Respectfully submitted,

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